

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 15009pc1	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/DK2004/0004 94	International filing date (day/month/year) 09/07/2004	(Earliest) Priority Date (day/month/year) 14/07/2003
Applicant STATENS SERUM INSTITUT		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 6 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. _____

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☒ none of the figures is to be published with the abstract.

Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of Item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:
- a. type of material
- ☒ a sequence listing
- ☐ table(s) related to the sequence listing
- b. format of material
- ☒ in written format
- ☒ in computer readable form
- c. time of filing/furnishing
- ☐ contained in the international application as filed
- ☐ filed together with the international application in computer readable form
- ☒ furnished subsequently to this Authority for the purpose of search
2. ☒ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
3. Additional comments:

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, PAJ, EMBL, WPI Data, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 556 504 A (SHIMADZU CORP) 25 August 1993 (1993-08-25) *seq id 11 ; seq id 19 , seq id 18*	25-28
X	WO 01/94634 A (BIOPOL INT INC) 13 December 2001 (2001-12-13) *slt1*	25,26
X	WO 02/36827 A (AUSUBEL FREDERICK M ; GEN HOSPITAL CORP (US); KUDVA INDIRA (US); CALDE) 10 May 2002 (2002-05-10) *seq id no 20*	25,26
X	JP 2003 164282 A (RAKAN:KK; GIFU UNIV) 10 June 2003 (2003-06-10) *probe seq id 176; probe seq 178 *	25-28
	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *Z* document member of the same patent family

Date of the actual completion of the international search

11 November 2004

Date of mailing of the international search report

07/12/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Cornelis, K

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/010332 A (SCHINKINGER MANFRED ; VOLLENHOFER-SCHRUMPF SABINE (AT); FRAENZL GERT () 6 February 2003 (2003-02-06) *seq id 7*	25,26
X	WO 95/29261 A (UNIV HAWAII) 2 November 1995 (1995-11-02) *seq id 6*	25,26
X	WO 01/48237 A (HOEFT ANDREAS ; STUEBER FRANK (DE)) 5 July 2001 (2001-07-05) *oligonucleotide sknI*	25,26
X	WO 99/63112 A (FRASER MARK S ; HUNT WESSON INC (US); ROMICK THOMAS L (US)) 9 December 1999 (1999-12-09) *seq 27*	27,28
X	WO 92/17609 A (HOLMES MICHAEL JOHN ; DYNAL AS (NO)) 15 October 1992 (1992-10-15) *primer 4*	27,28
X	WO 00/61720 A (NERENBERG MICHAEL I ; EDMAN CARL F (US); METHA PRESHANT P (US); NANOGE) 19 October 2000 (2000-10-19) *seq id 45*	27,28
X	DE 101 23 183 A (BECTON DICKINSON CO) 22 November 2001 (2001-11-22) *seq id 36*	27,28
X	WO 02/053771 A (BIOTECON) 11 July 2002 (2002-07-11) *seq id 24,25,39,82*	25-28
X	WO 00/29618 A (UNIVERISTY OF VIRGINIA PATENT FOUNDATION) 25 May 2000 (2000-05-25) *seq id 1*	27,28
Y	RICH CHANTAL ET AL: "Identification of human enterovirulent Escherichia coli strains by multiplex PCR" JOURNAL OF CLINICAL LABORATORY ANALYSIS, vol. 15, no. 2, 2001, pages 100-103, XP008038376 ISSN: 0887-8013 the whole document	1-38

-/--

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATON A W ET AL: "Direct detection and characterization of shiga toxigenic Escherichia coli by multiplex PCR for stx1, stx2, eae, ehxA, and saa" JOURNAL OF CLINICAL MICROBIOLOGY 2002 UNITED STATES, vol. 40, no. 1, 2002, pages 271-274, XP002304663 ISSN: 0095-1137 the whole document	1-38
A	WO 01/46477 A (CONAGRA GROCERY PRODUCTS COMPA) 28 June 2001 (2001-06-28) page 20; figure 4	1-38
A	TOMA C ET AL: "Multiplex PCR assay for identification of human diarrheagenic Escherichia coli" JOURNAL OF CLINICAL MICROBIOLOGY 01 JUN 2003 UNITED STATES, vol. 41, no. 6, 1 June 2003 (2003-06-01), pages 2669-2671, XP002304664 ISSN: 0095-1137 the whole document	1-38
A	LOPEZ-SAUCEDO CATALINA ET AL: "Single multiplex polymerase chain reaction to detect diverse loci associated with diarrheagenic Escherichia coli." EMERGING INFECTIOUS DISEASES, vol. 9, no. 1, January 2003 (2003-01), pages 127-131, XP002305114 ISSN: 1080-6040 cited in the application the whole document	1-38
A	PASS M A ET AL: "Multiplex PCRs for identification of Escherichia coli virulence genes" JOURNAL OF CLINICAL MICROBIOLOGY, vol. 38, no. 5, May 2000 (2000-05), pages 2001-2004, XP002305115 ISSN: 0095-1137 cited in the application the whole document	1-39

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0556504	A	25-08-1993	JP 2067556 C	10-07-1996
			JP 5227999 A	07-09-1993
			JP 7102158 B	08-11-1995
			DE 69231961 D1	30-08-2001
			DE 69231961 T2	04-04-2002
			EP 1085099 A2	21-03-2001
			EP 1085100 A1	21-03-2001
			EP 1085101 A2	21-03-2001
			EP 0556504 A2	25-08-1993
			US 5516898 A	14-05-1996
			US 5525718 A	11-06-1996
			US 5468852 A	21-11-1995
			JP 2067558 C	10-07-1996
			JP 5317098 A	03-12-1993
			JP 7102159 B	08-11-1995
WO 0194634	A	13-12-2001	US 6605451 B1	12-08-2003
			AU 6532701 A	17-12-2001
			CA 2410281 A1	13-12-2001
			EP 1352087 A2	15-10-2003
			JP 2004511215 T	15-04-2004
			WO 0194634 A2	13-12-2001
			US 2003224437 A1	04-12-2003
WO 0236827	A	10-05-2002	AU 2705502 A	15-05-2002
			EP 1337666 A1	27-08-2003
			US 2002078641 A1	27-06-2002
			WO 0236827 A1	10-05-2002
			US 2004009577 A1	15-01-2004
JP 2003164282	A	10-06-2003	NONE	
WO 03010332	A	06-02-2003	AT 411832 B	25-06-2004
			WO 03010332 A2	06-02-2003
			AT 11722001 A	15-11-2003
			EP 1409742 A2	21-04-2004
WO 9529261	A	02-11-1995	US 5705332 A	06-01-1998
			WO 9529261 A1	02-11-1995
			US 5627275 A	06-05-1997
WO 0148237	A	05-07-2001	DE 10027113 A1	27-09-2001
			AU 3360101 A	09-07-2001
			WO 0148237 A2	05-07-2001
			DE 10084146 D2	16-01-2003
			EP 1266028 A2	18-12-2002
WO 9963112	A	09-12-1999	AU 4001299 A	20-12-1999
			EP 1080224 A2	07-03-2001
			WO 9963112 A2	09-12-1999
			US 6468743 B1	22-10-2002
WO 9217609	A	15-10-1992	AU 1439392 A	02-11-1992
			WO 9217609 A1	15-10-1992
WO 0061720	A	19-10-2000	US 6238868 B1	29-05-2001
			WO 0061818 A1	19-10-2000
			WO 0061720 A2	19-10-2000

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0061720	A		US 2002068334 A1	06-06-2002
DE 10123183	A	22-11-2001	DE 10123183 A1	22-11-2001
			FR 2809105 A1	23-11-2001
WO 02053771	A	11-07-2002	DE 10100493 A1	01-08-2002
			CA 2434120 A1	11-07-2002
			WO 02053771 A2	11-07-2002
			EP 1366189 A2	03-12-2003
			JP 2004519225 T	02-07-2004
			US 2004110251 A1	10-06-2004
WO 0029618	A	25-05-2000	AU 1716500 A	05-06-2000
			WO 0029618 A1	25-05-2000
WO 0146477	A	28-06-2001	AU 4711501 A	03-07-2001
			CA 2391314 A1	28-06-2001
			EP 1242631 A1	25-09-2002
			JP 2003517843 T	03-06-2003
			WO 0146477 A1	28-06-2001
			US 2004137486 A1	15-07-2004